EIA's
Global Natural Gas Outlook

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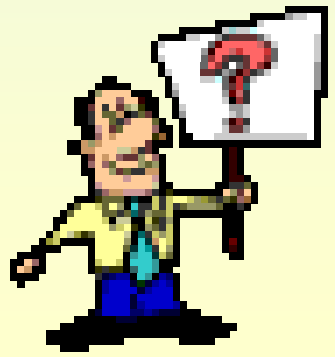
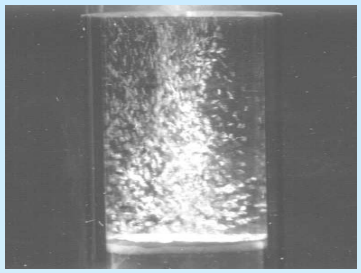
Scope of Presentation

- Global Outlook
- Domestic Short-term Outlook
- Domestic Long-term Outlook
- Questions



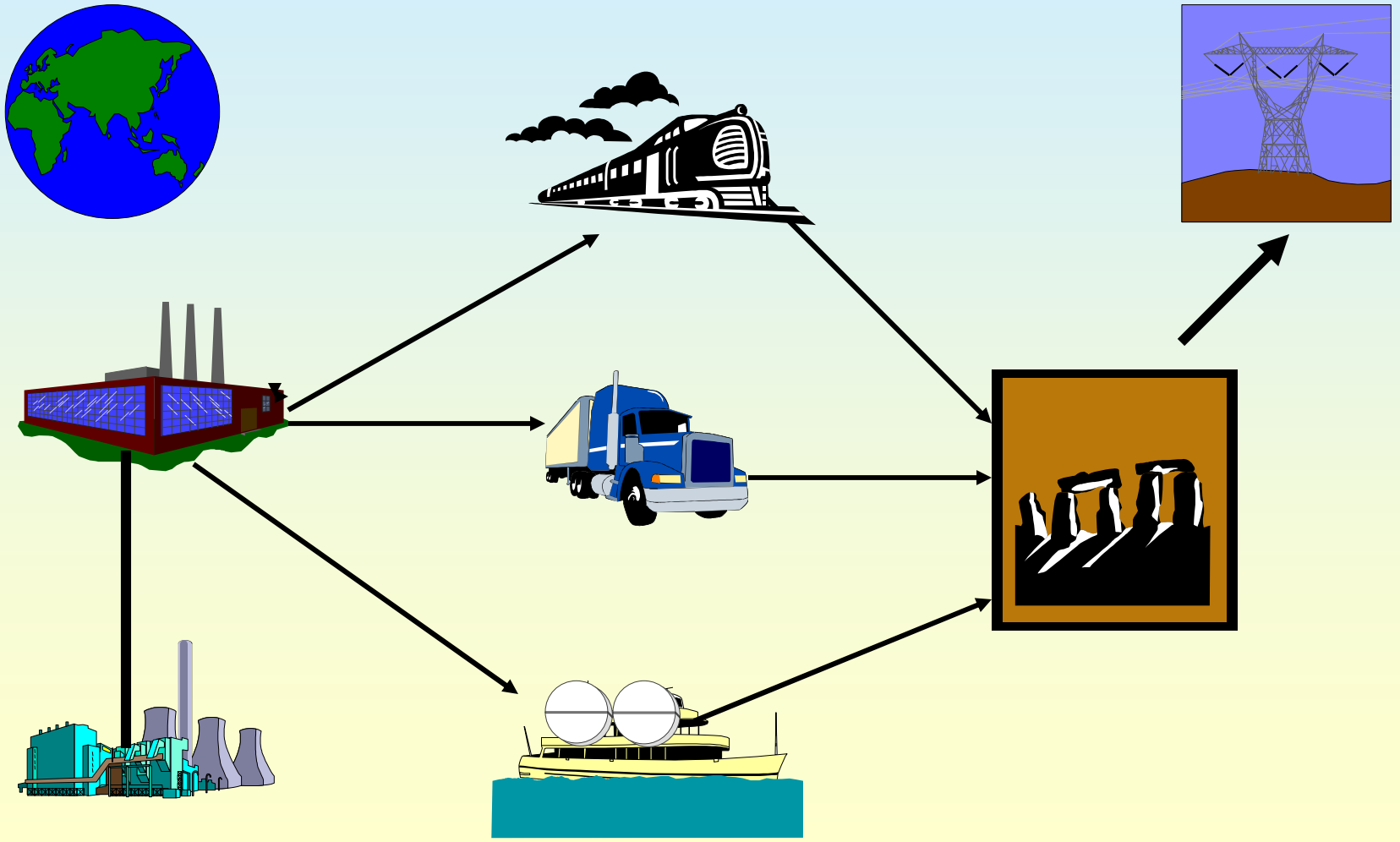
Global Outlook



What is LNG ?

- Liquefied natural gas or LNG is natural gas that has been liquefied by reducing its temperature to minus 260 degrees Fahrenheit.
- It is an odorless, colorless liquid
- Its volume is reduced to around one six-hundredth of its volume as a gas
- It is stored and transported in specifically designed railcars, trucks or seagoing vessels at atmospheric pressure

Simplified View of Steps in LNG Process



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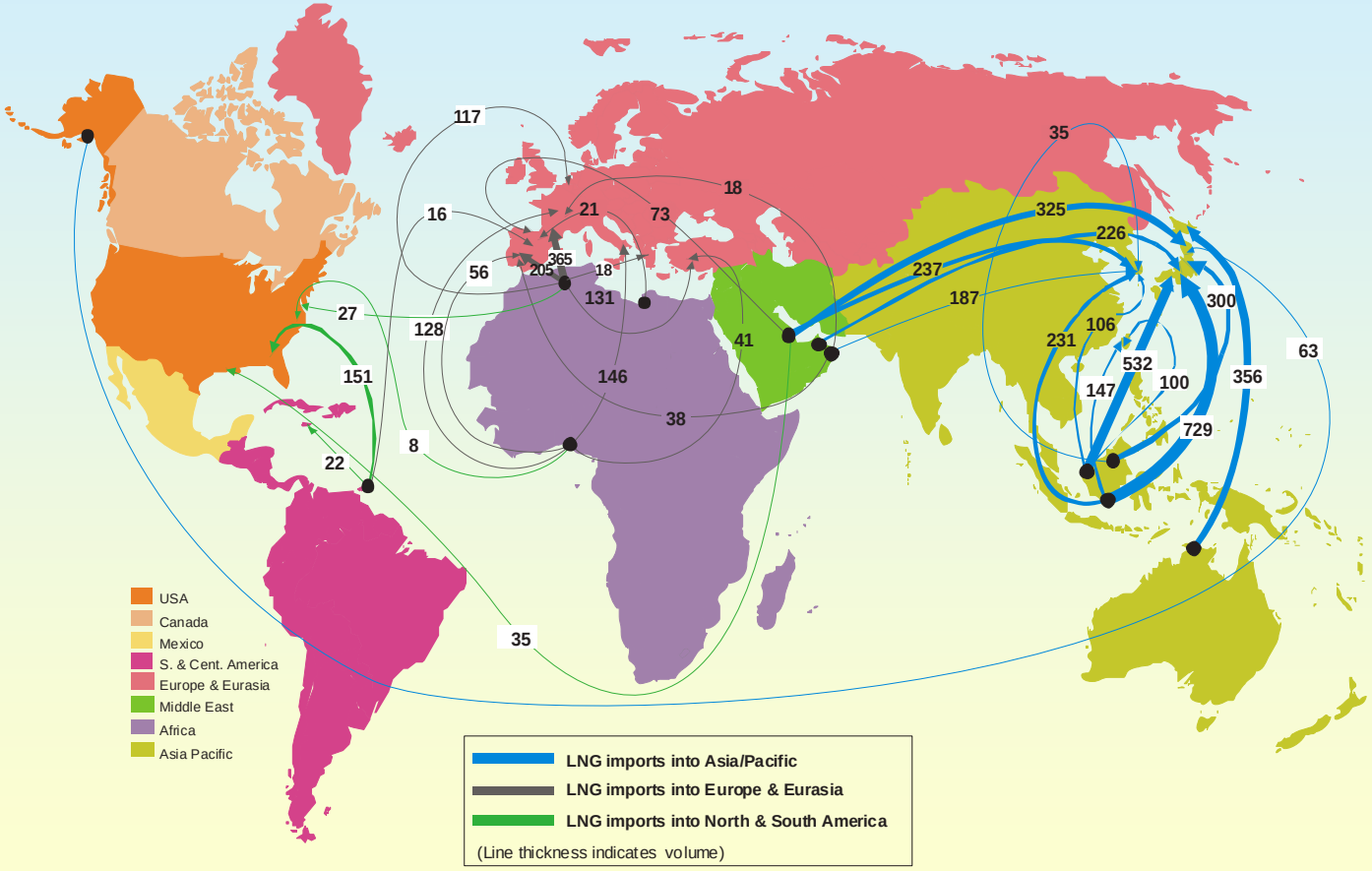
World LNG Trade, 2002



Note: The map includes flows greater than 5 Bcf for imports into the United States and flows greater than 15 Bcf for imports into all other Countries.

Source: **Imports to the United States and Imports to Japan and Mexico from the United States:** Energy Information Administration, *Natural Gas Monthly* (May 2003). **All other countries**: Organization for Economic Cooperation and Development, International Energy Agency, *Natural Gas Information 2003* (with 2002 data)

International Energy Outlook 2005 indicates that over the next two decades…

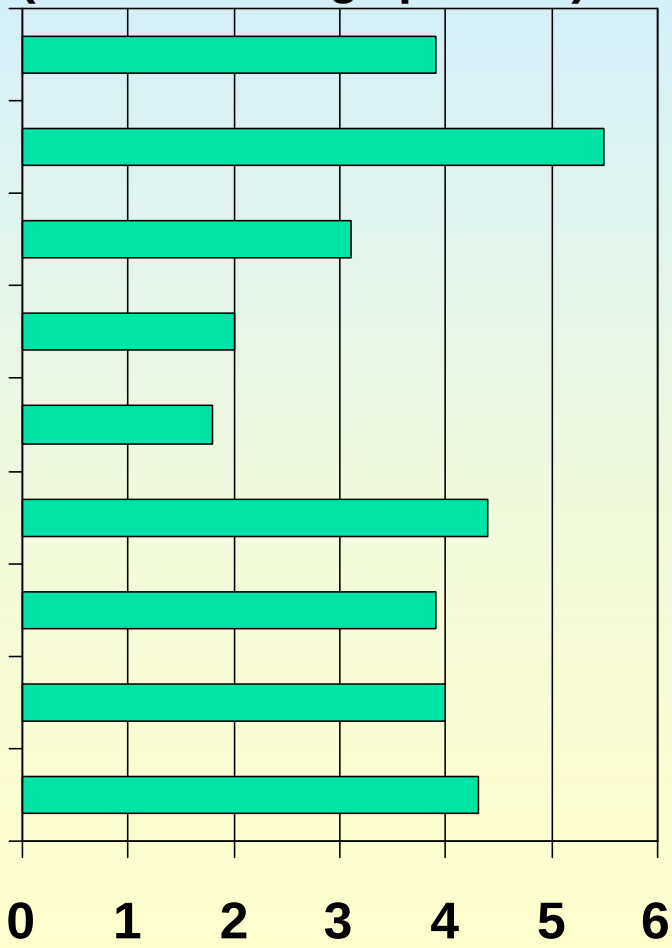
- **Worldwide energy consumption will grow by 57 percent between 2002 and 2025, an average annual growth rate of 2 percent**
- **The strongest growth is expected to be in the emerging economies, particularly in Asia.**
- **World oil demand will grow from 78 to 119 million barrels per day, with the United States and emerging Asia, including China and India, accounting for 64 percent of the growth.**
- **Natural gas will be the fastest growing energy source worldwide, at a average growth rate of 2.3 percent.**
- **Although the slowest growing energy source, nuclear power will increase, particularly in emerging Asia, where its use will triple.**

International Energy Outlook 2005
Country Groups

- **The *emerging economies* include developing Asia (including China, India, and South Korea, but excluding Japan, Australia, and New Zealand), Middle East (including Turkey), Africa, and Central and South America (including Brazil, but excluding Mexico).**
- **The *transitional economies* include eastern Europe and the former Soviet Union.**
- **The *mature market economies* are the industrialized countries.**

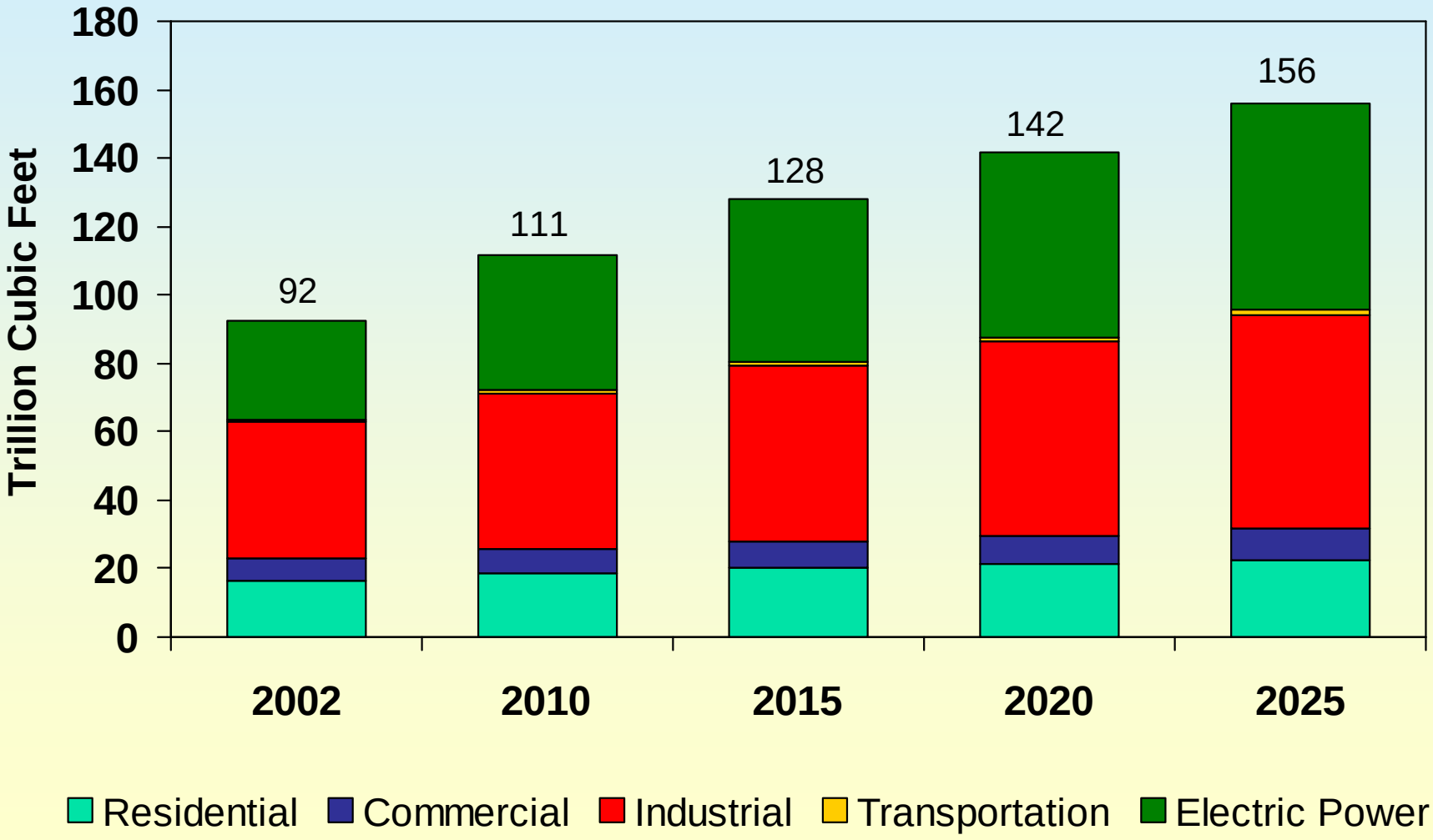
World and Regional GDP, 2002, and GDP Growth Rates, 2002-2025

(billion 2000 dollars)	
47,227	World
13,196	Emerging Asia
11,997	North America
9,416	Western Europe
3,904	Mature Market Asia
3,460	EE/FSU
2,388	Central & South America
1,434	Africa
1,431	Middle East



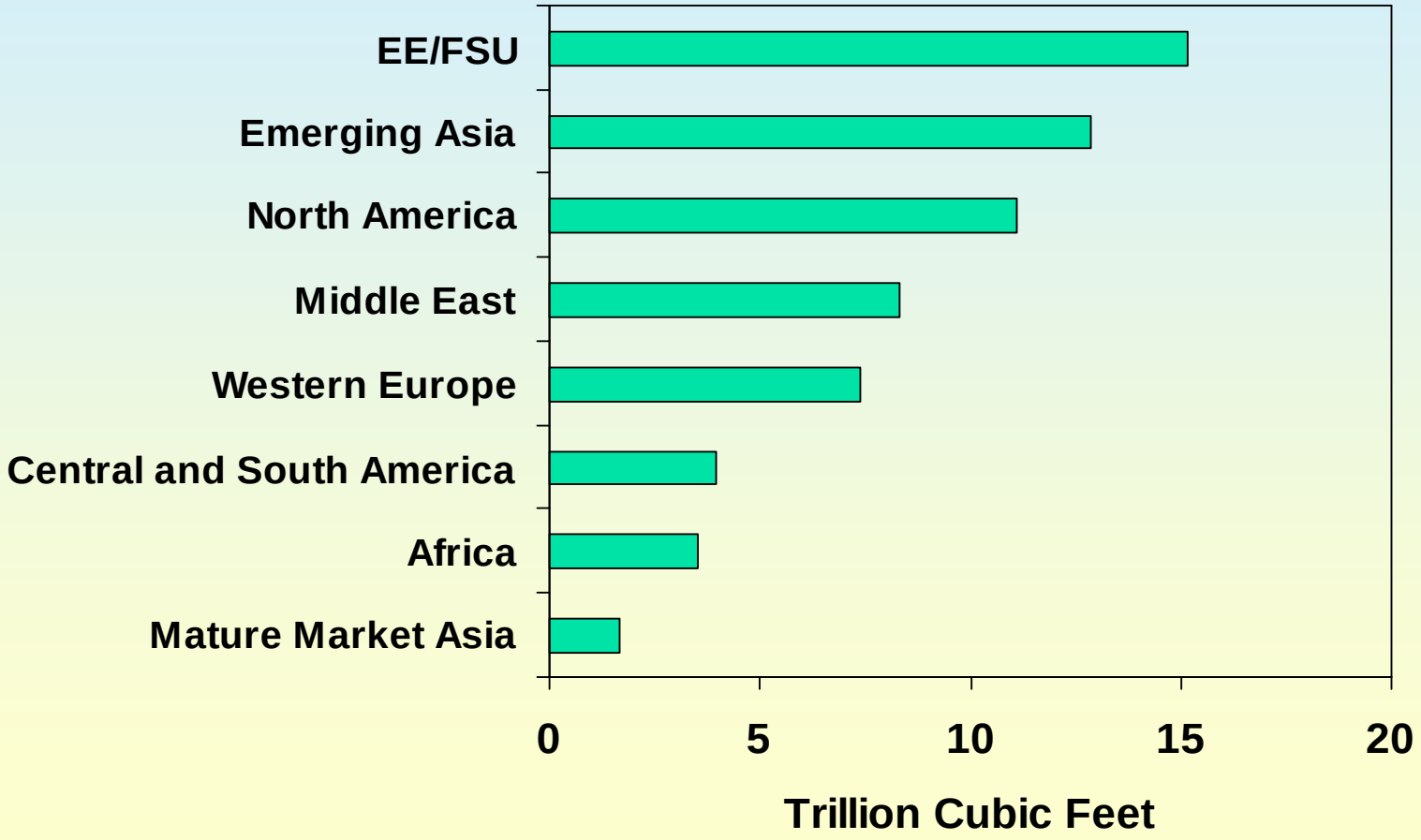
Source: EIA, *International Energy Outlook 2005*

World Natural Gas Consumption by End-Use Sector, 2002 - 2025



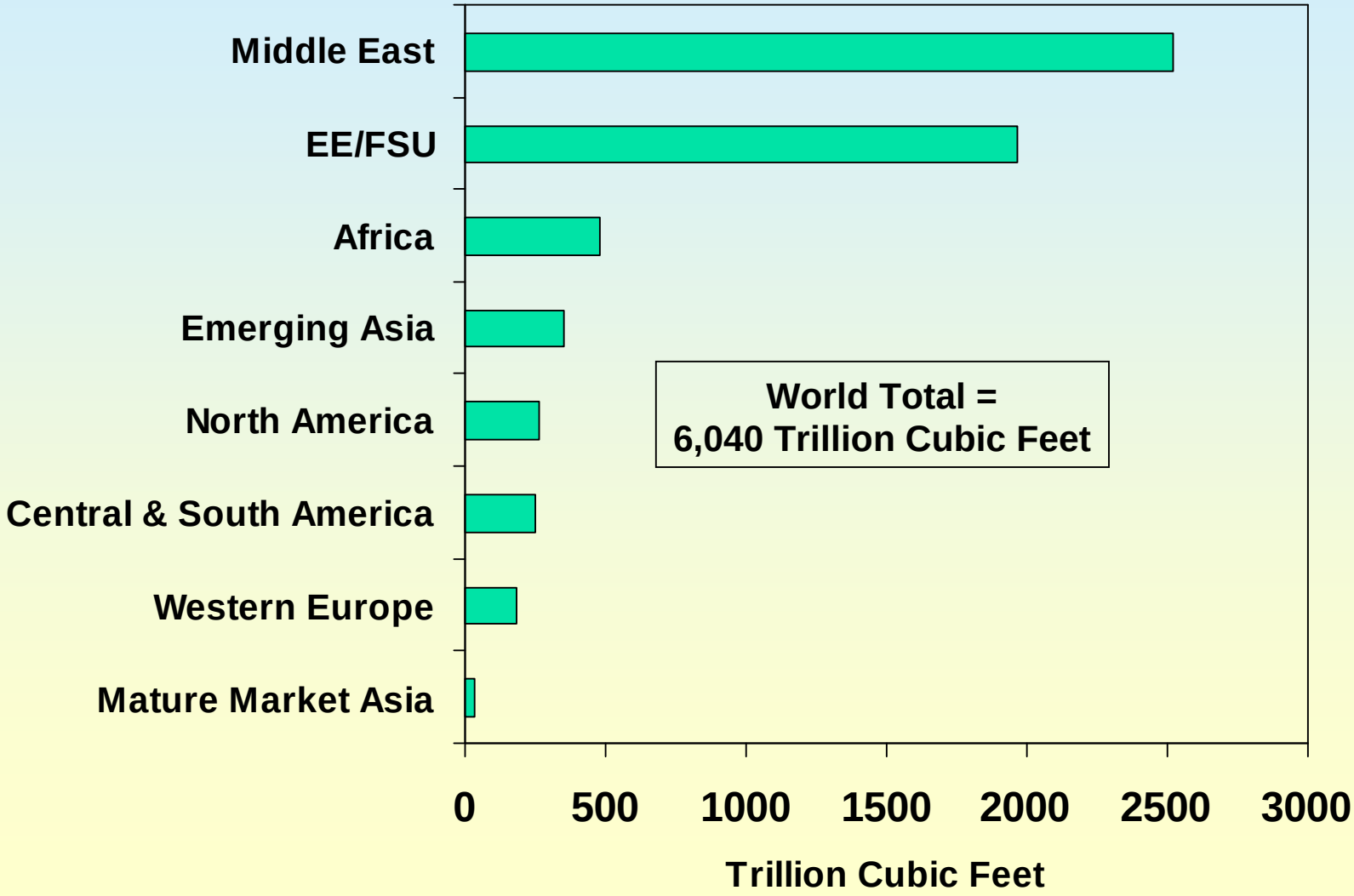
Source: EIA, *International Energy Outlook 2005*

Increases in World Natural Gas Consumption by Region and Country Group, 2002-2025



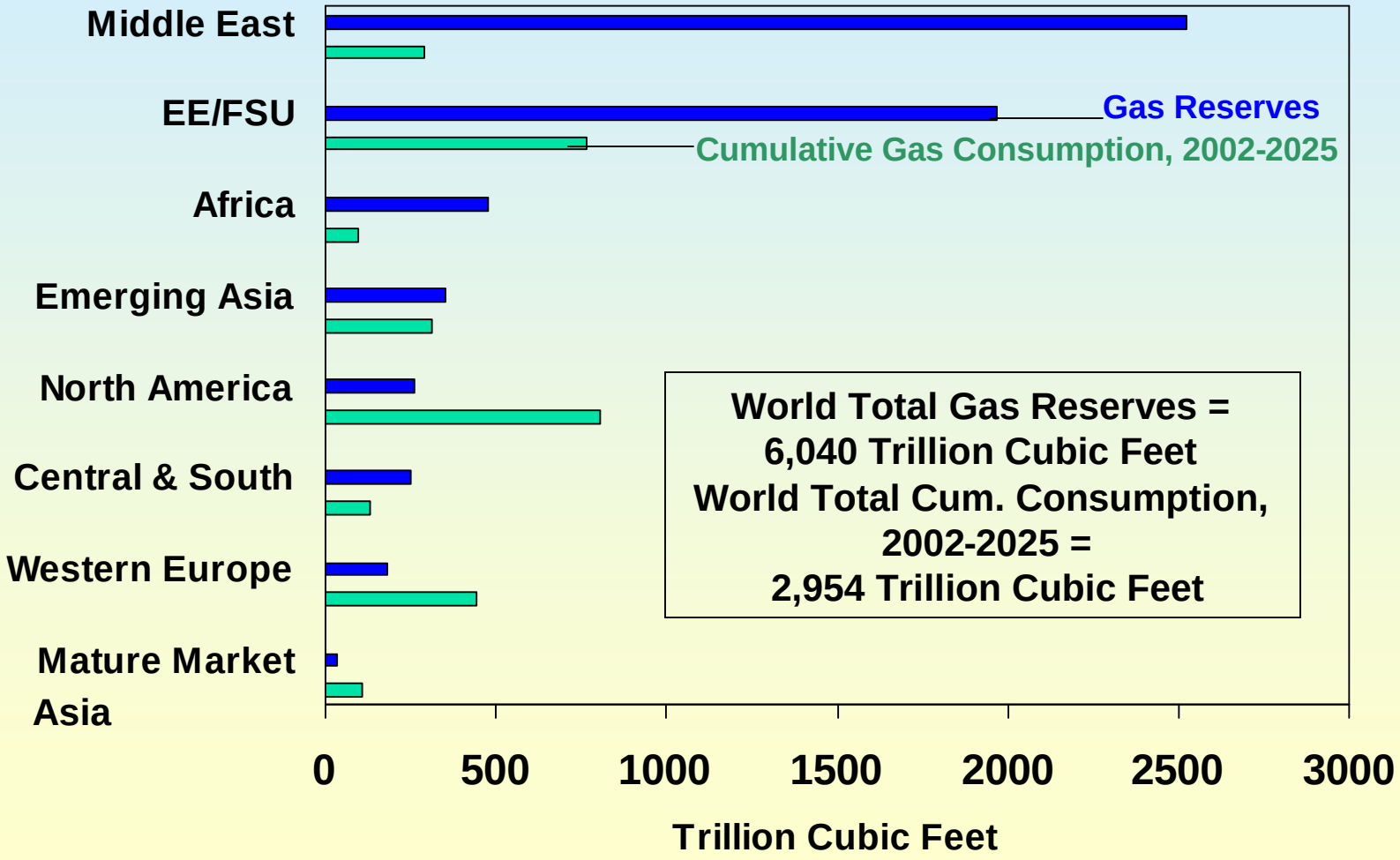
Source: EIA, *International Energy Outlook 2005*

World Natural Gas Reserves by Region, as of January 1, 2005



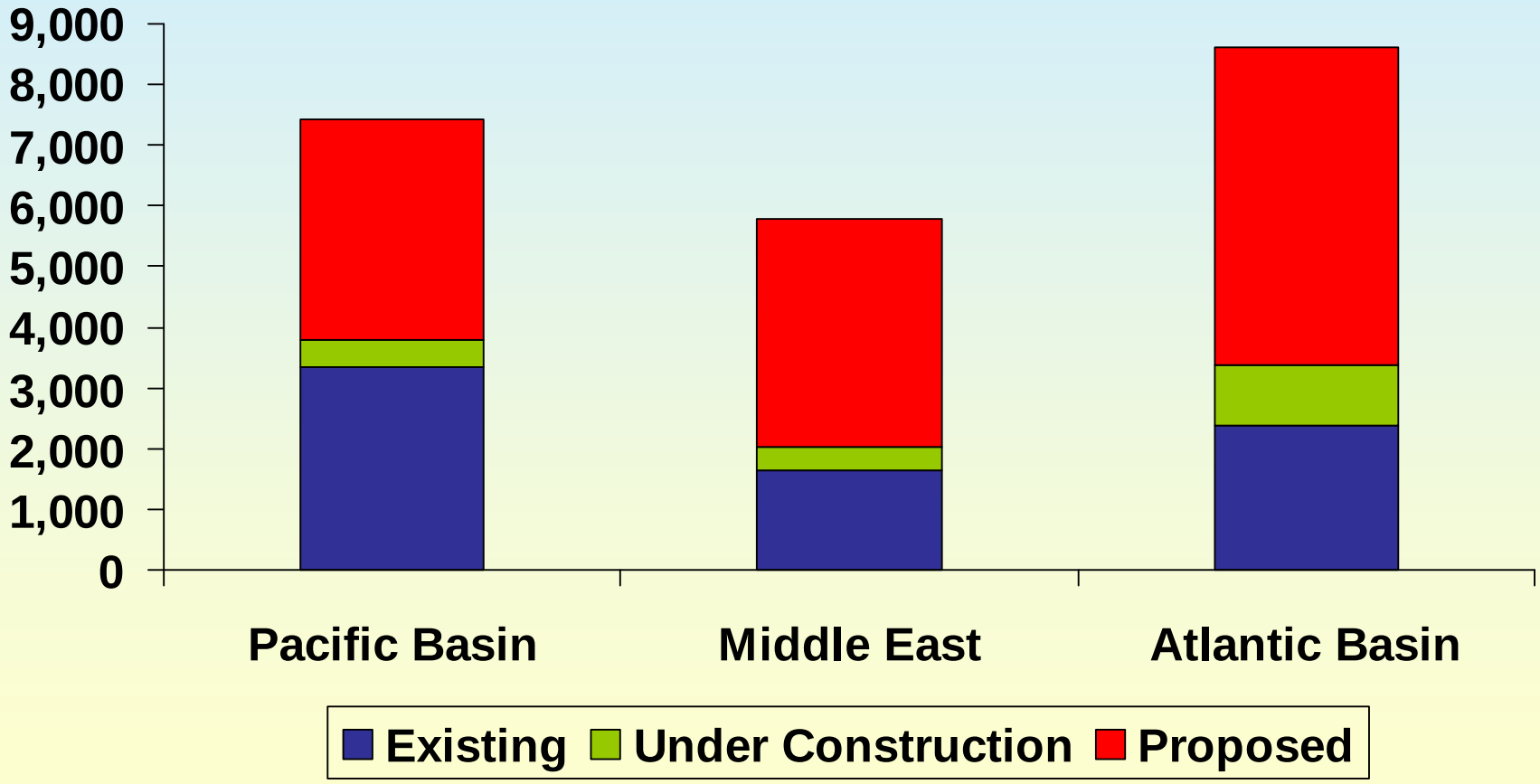
Source: "Worldwide Look at Reserves and Production," *Oil & Gas Journal*, Vol. 102, No. 47,12/20/2004, pp.22-23.

World Natural Gas Reserves (as of January 1, 2005) and Cumulative Consumption by Region, 2002-2025



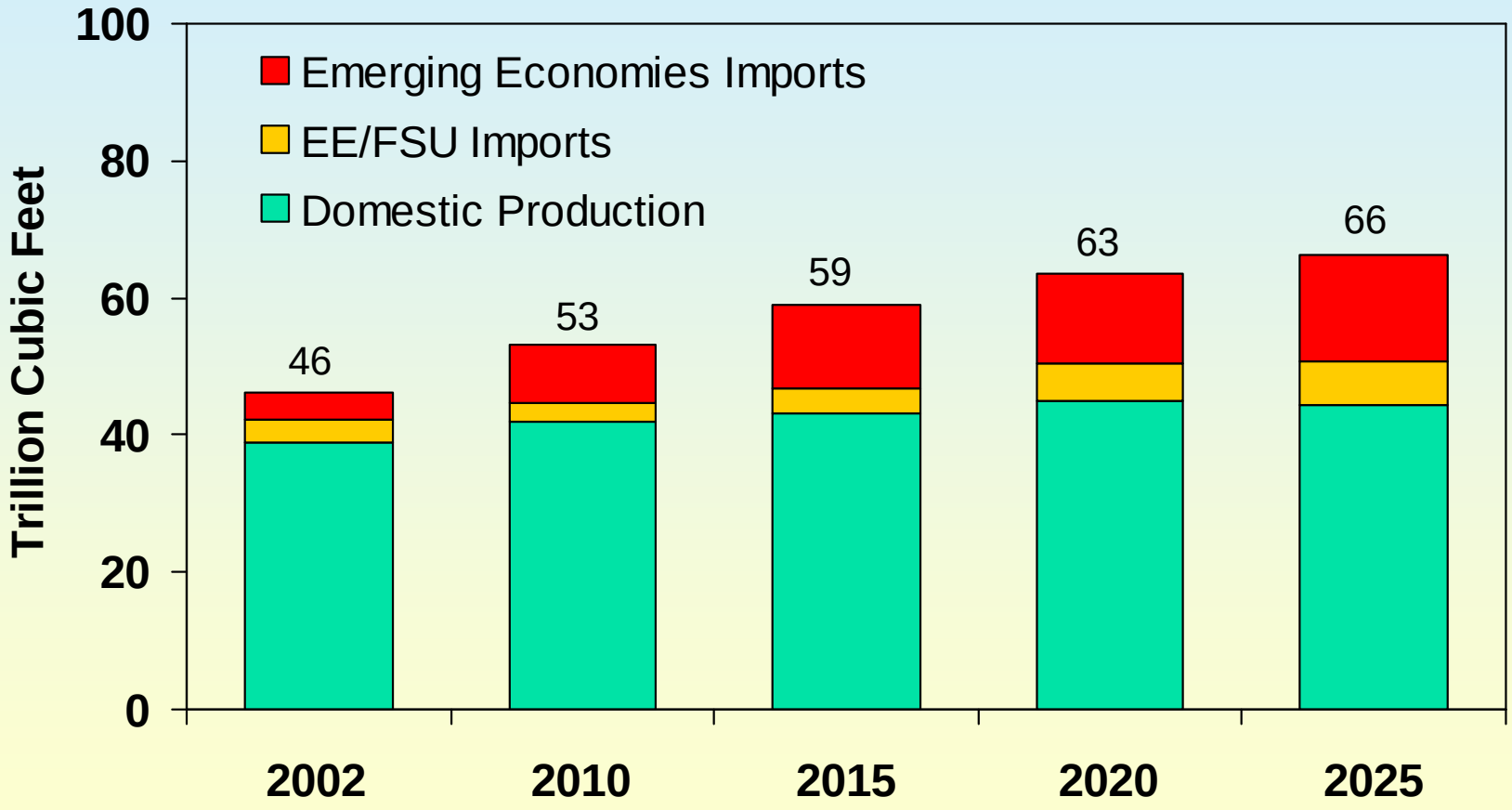
Sources: "Worldwide Look at Reserves and Production," *Oil & Gas Journal*, Vol. 102, No. 47 (December 20, 2004), pp. 22-23., and EIA, *International Energy Outlook 2005*

World LNG Liquefaction Capacity, September 2005 (billion cubic feet per year)



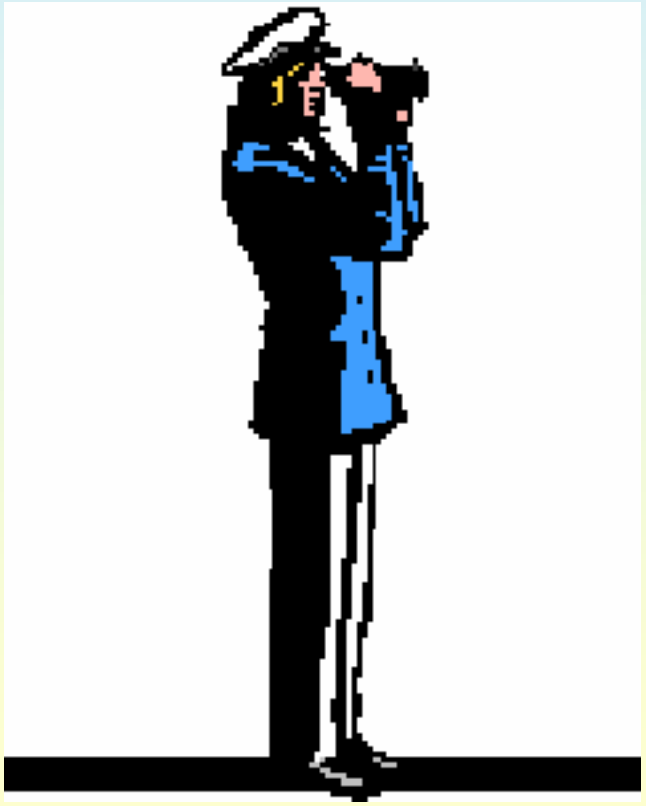
Source: Energy Information Administration

World Natural Gas Consumption in Mature Market Economies by Source, 2002-2025



Source: EIA, *International Energy Outlook 2005*

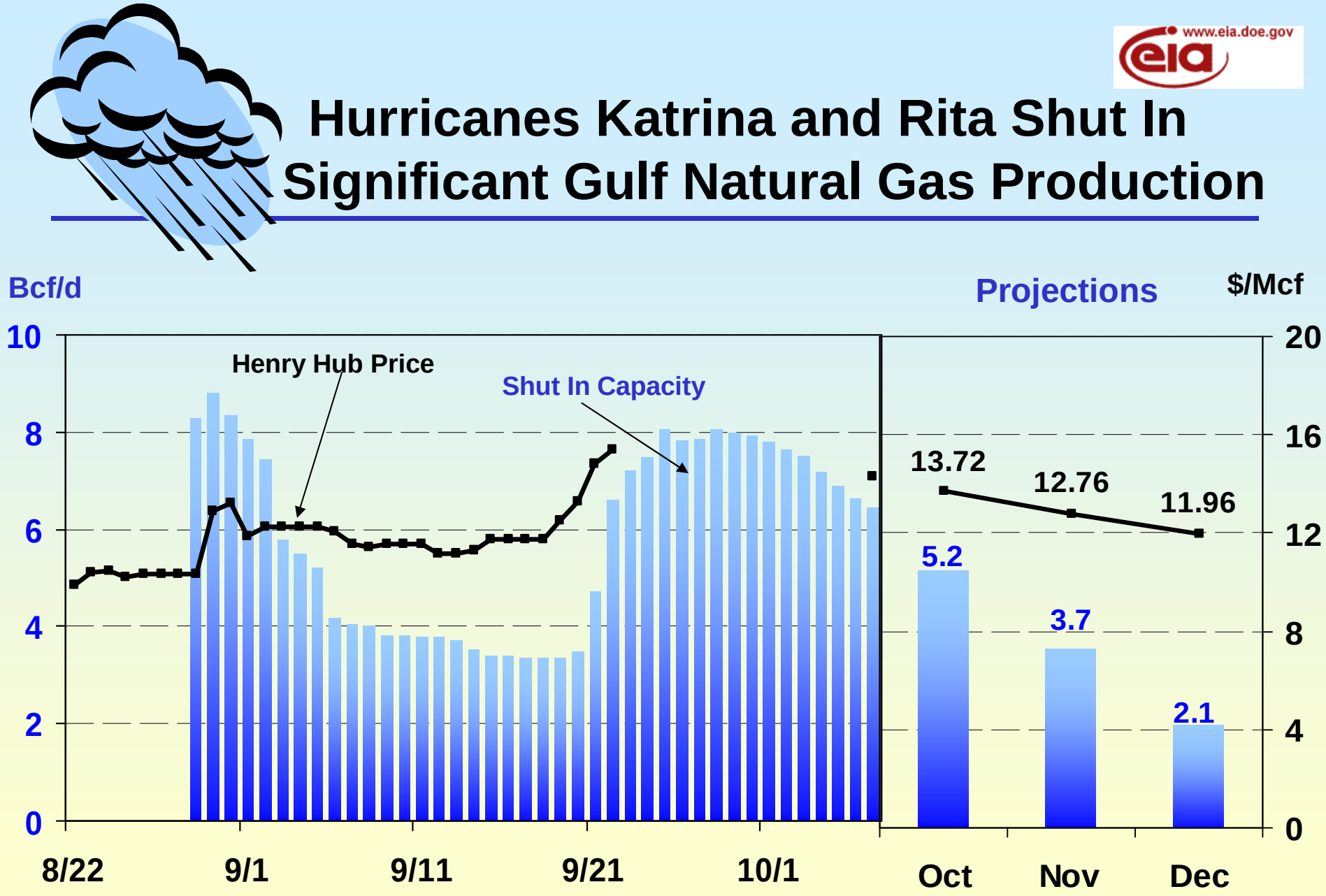
Domestic Short-term Outlook



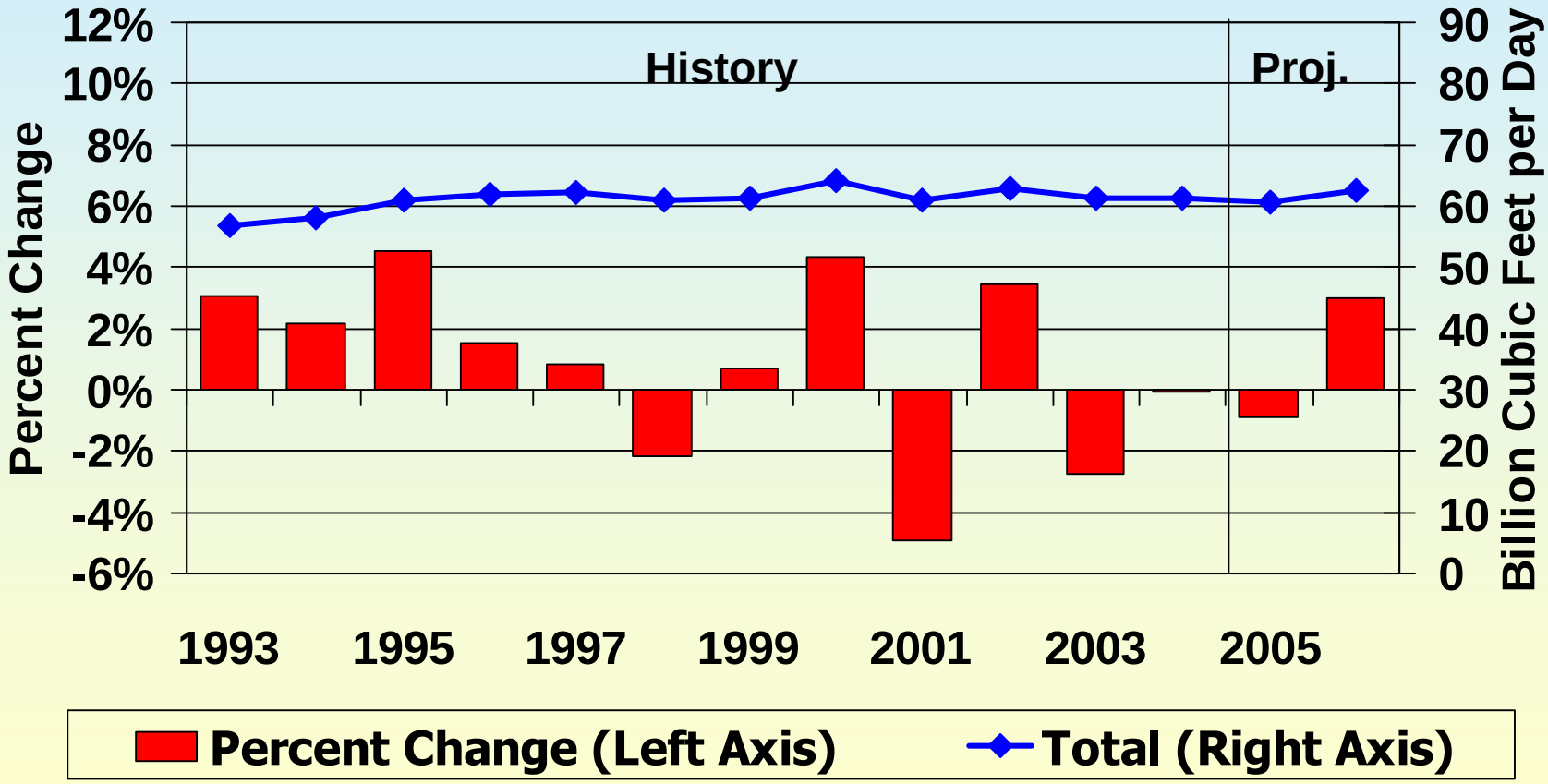
Several Factors are Driving Prices Higher

- International factors such as low spare crude oil capacity and political tensions contribute to uncertainty and low supply growth for crude oil.
- Recent hurricanes and associated disruptions exacerbate already tight markets in oil, petroleum products, and natural gas.
- NOAA predicts colder weather nationally for the 2005/06 winter – 3.2% colder than last winter and 0.4% colder than the 30-year average.

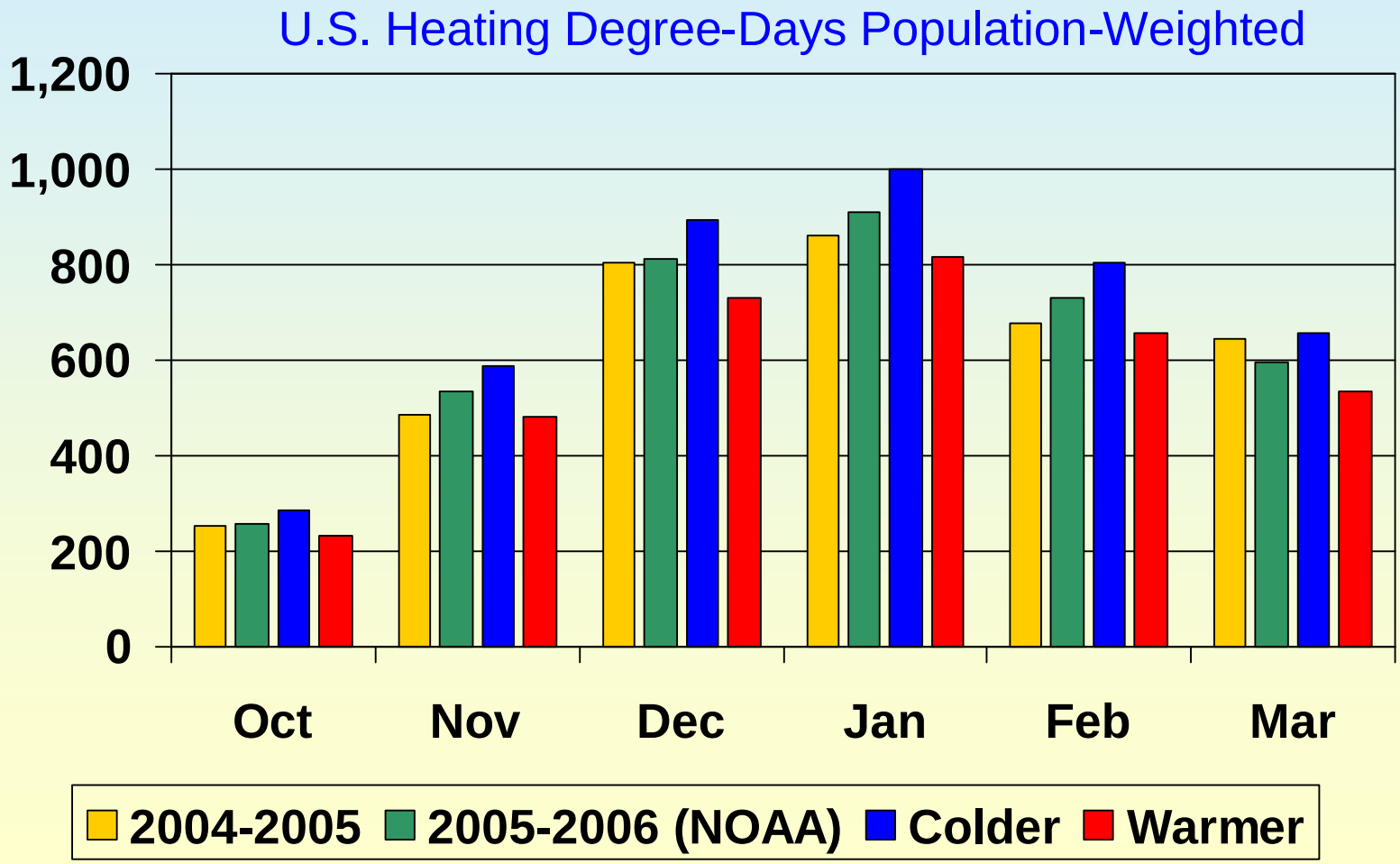
Hurricanes Katrina and Rita Shut In Significant Gulf Natural Gas Production



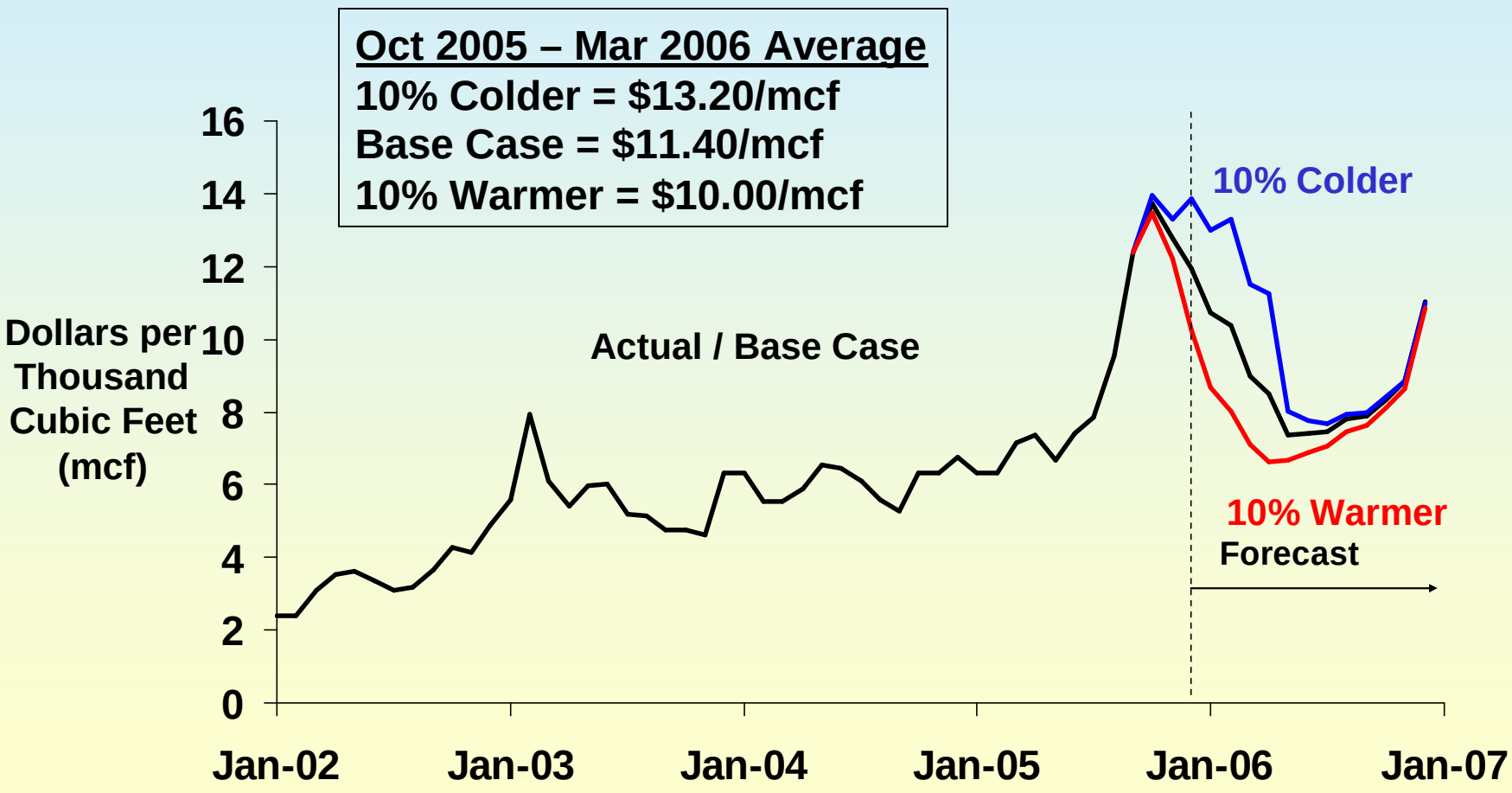
Total U.S. Natural Gas Demand Growth



A Slightly Colder Winter is Projected for the Lower - 48 States

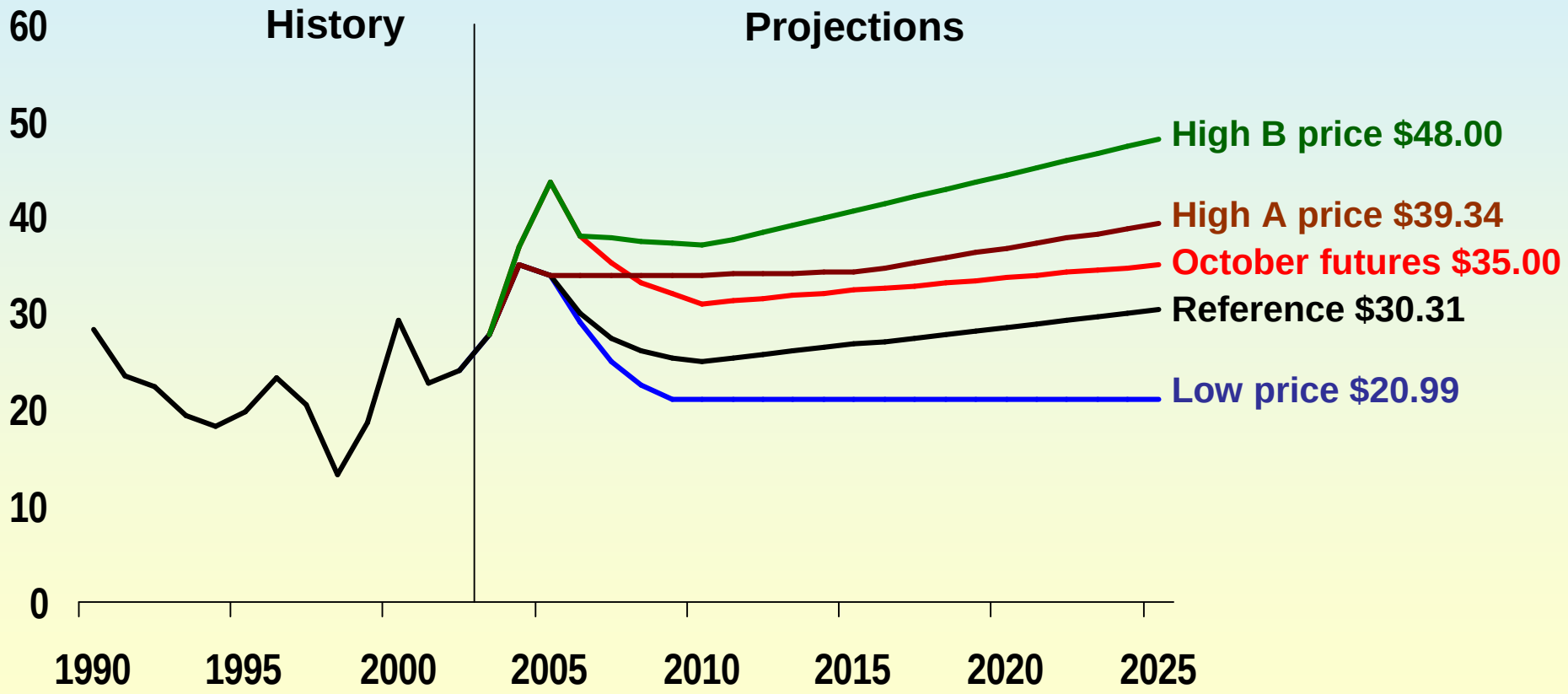


Natural Gas Spot Prices (Henry Hub): Baseline, Warmer, Colder Cases



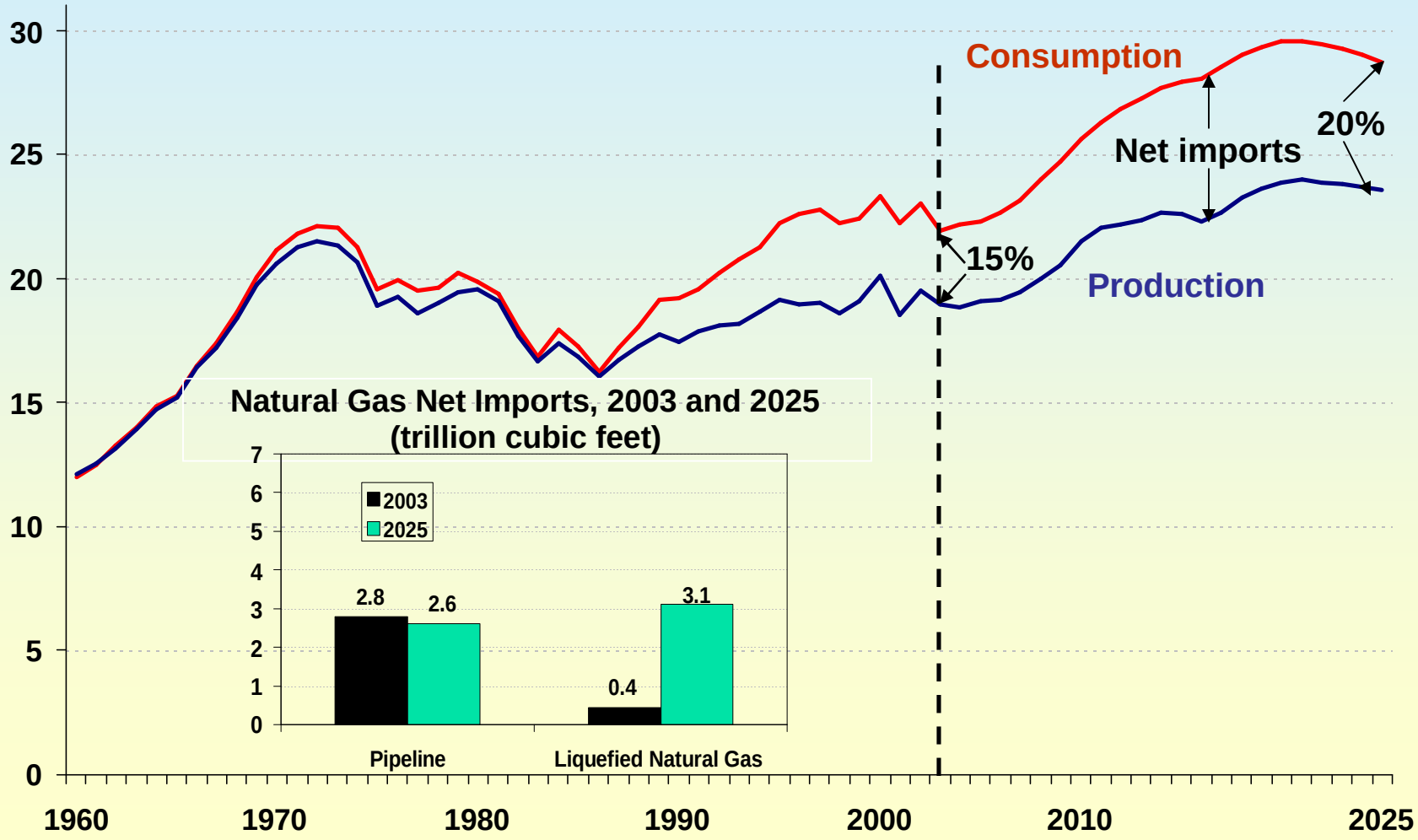
Domestic Long-term Outlook

World Oil Prices in Five Cases, 1990-2025 (2003 dollars per barrel)



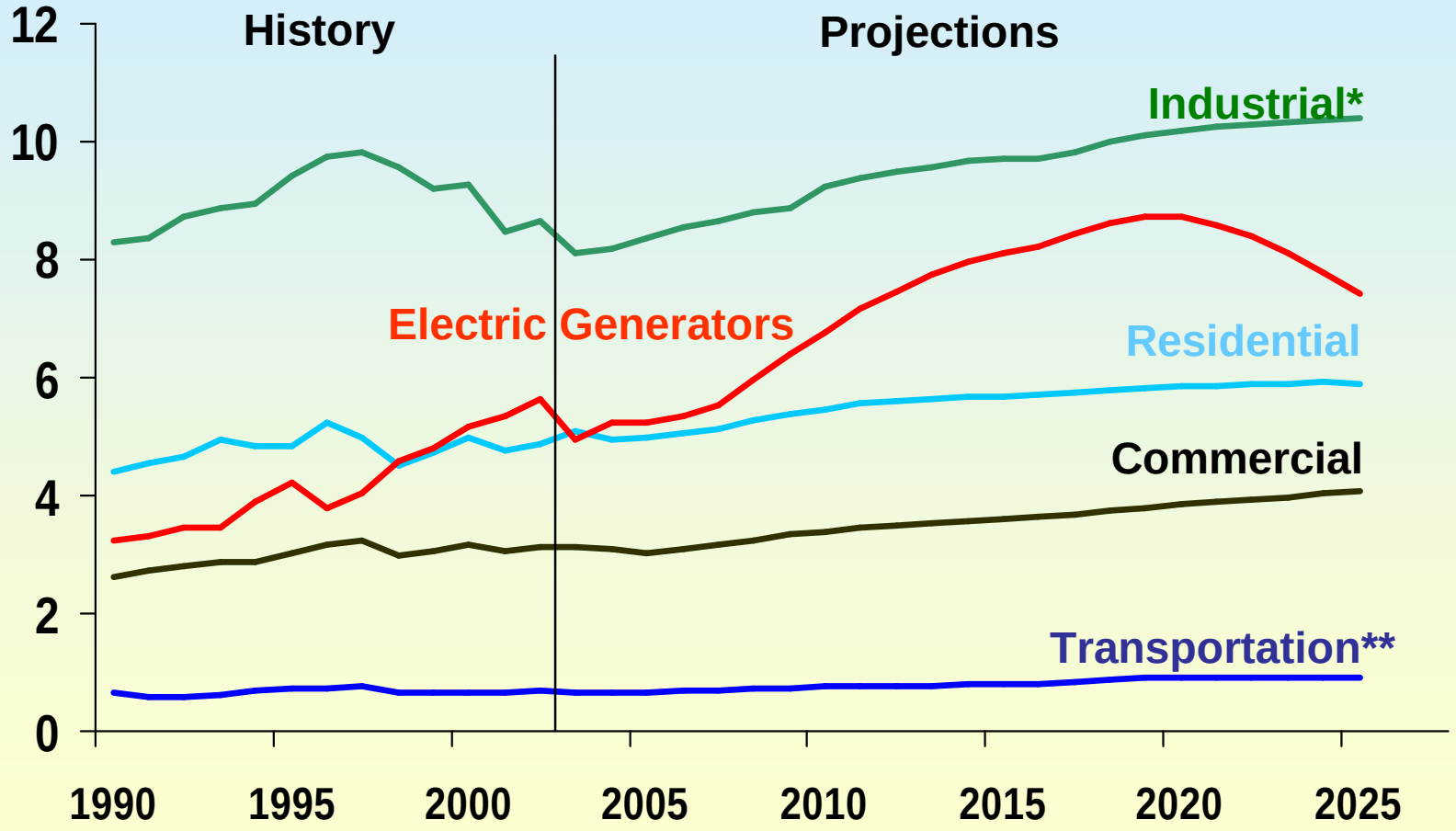
Source: *Annual Energy Outlook 2005*

Natural Gas Production, Consumption, and Imports, 1970 - 2025 (trillion cubic feet)



Source: *Annual Energy Outlook 2005-High B Oil Price Case*

U.S. Natural Gas Consumption by Sector, 1990-2025 (trillion cubic feet)

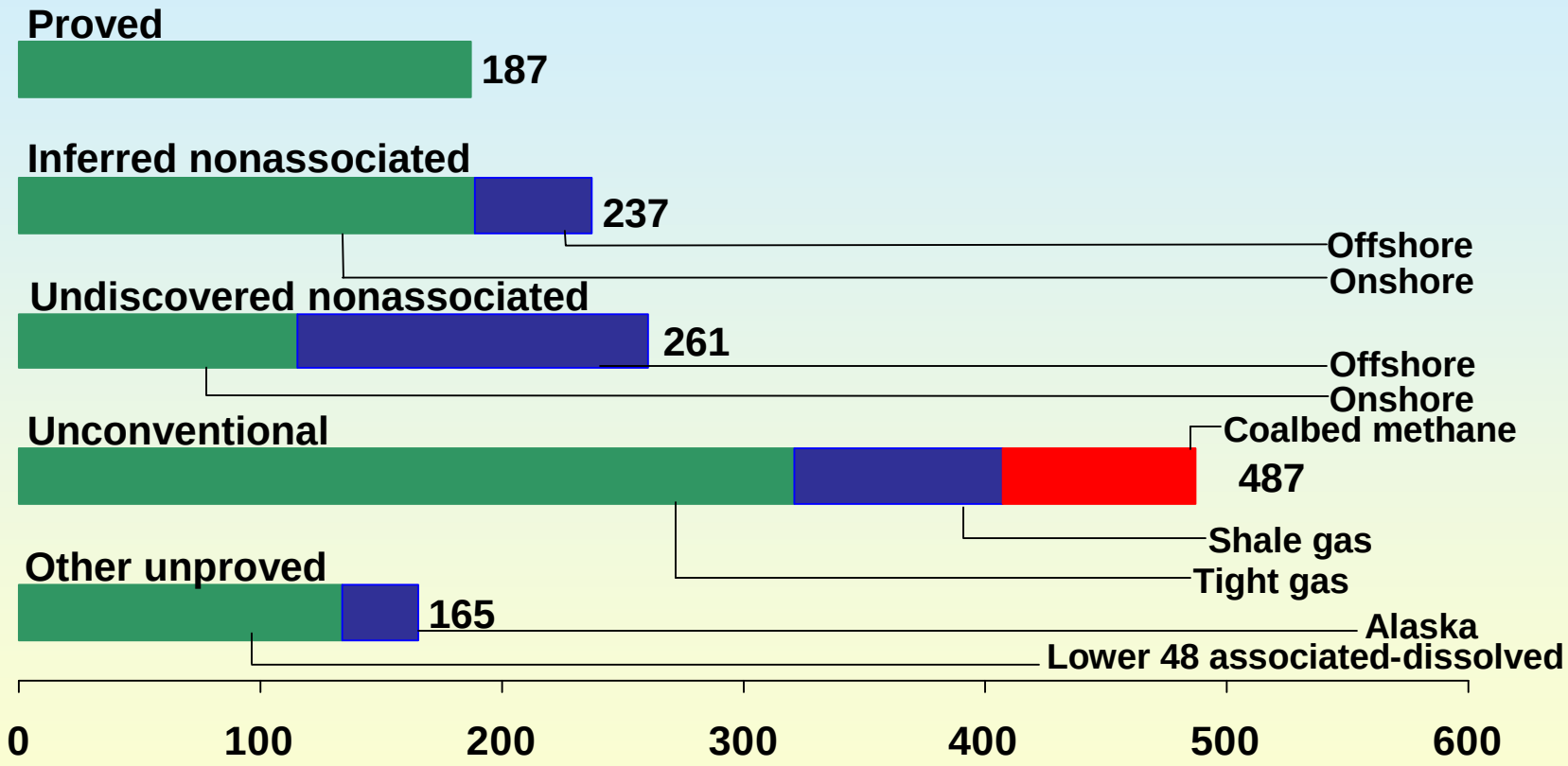


* Includes lease and plant fuel

** Includes pipeline fuel

Source: *Annual Energy Outlook 2005-High B Oil Price Case*

Technically Recoverable U.S. Natural Gas Resources as of January 1, 2003 (trillion cubic feet)



Total: 1,337 trillion cubic feet

Source: Energy Information Administration

Technically Recoverable Restricted Access U.S. Natural Gas Resources

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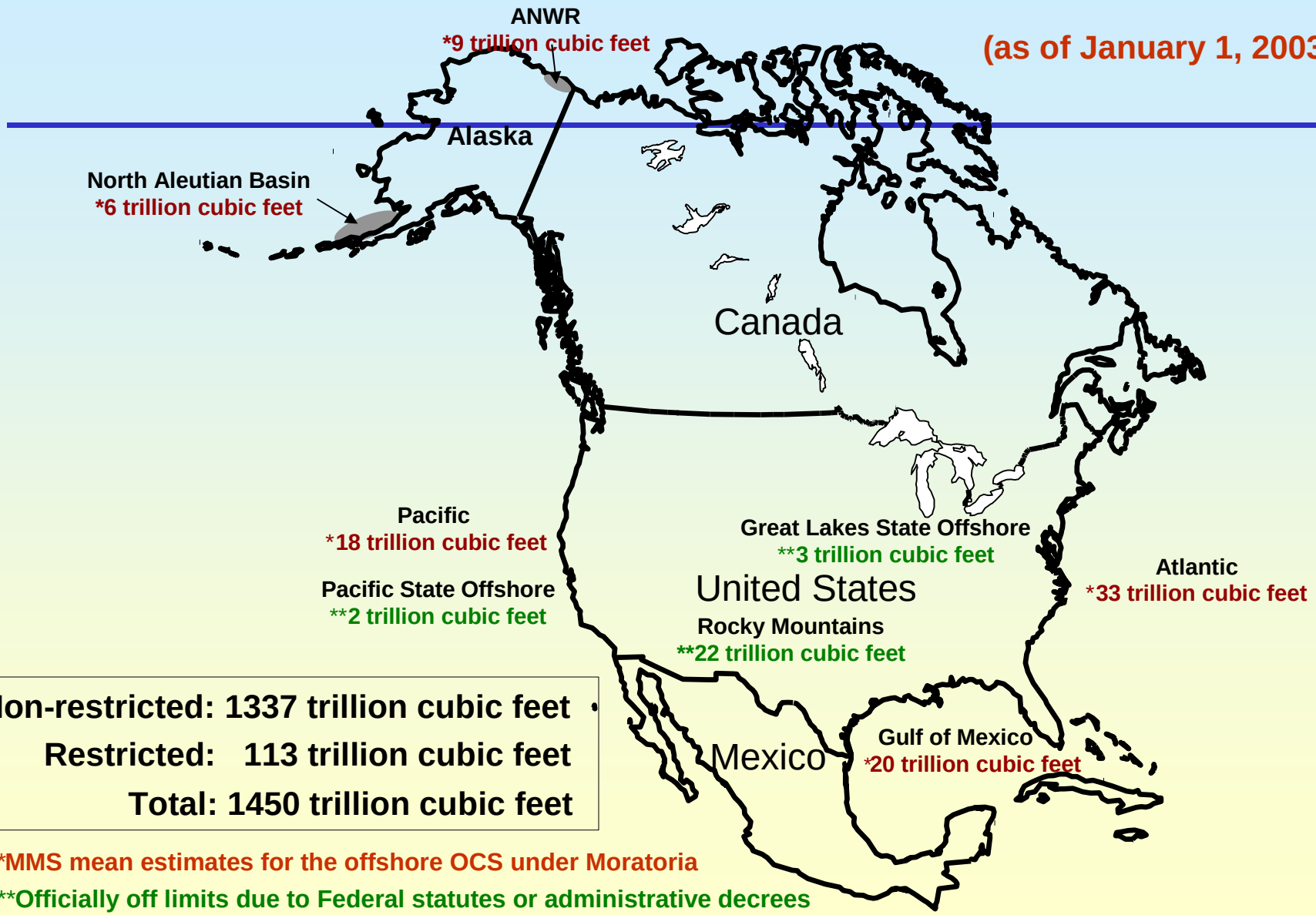
(as of January 1, 2003)



Non-restricted: 1337 trillion cubic feet

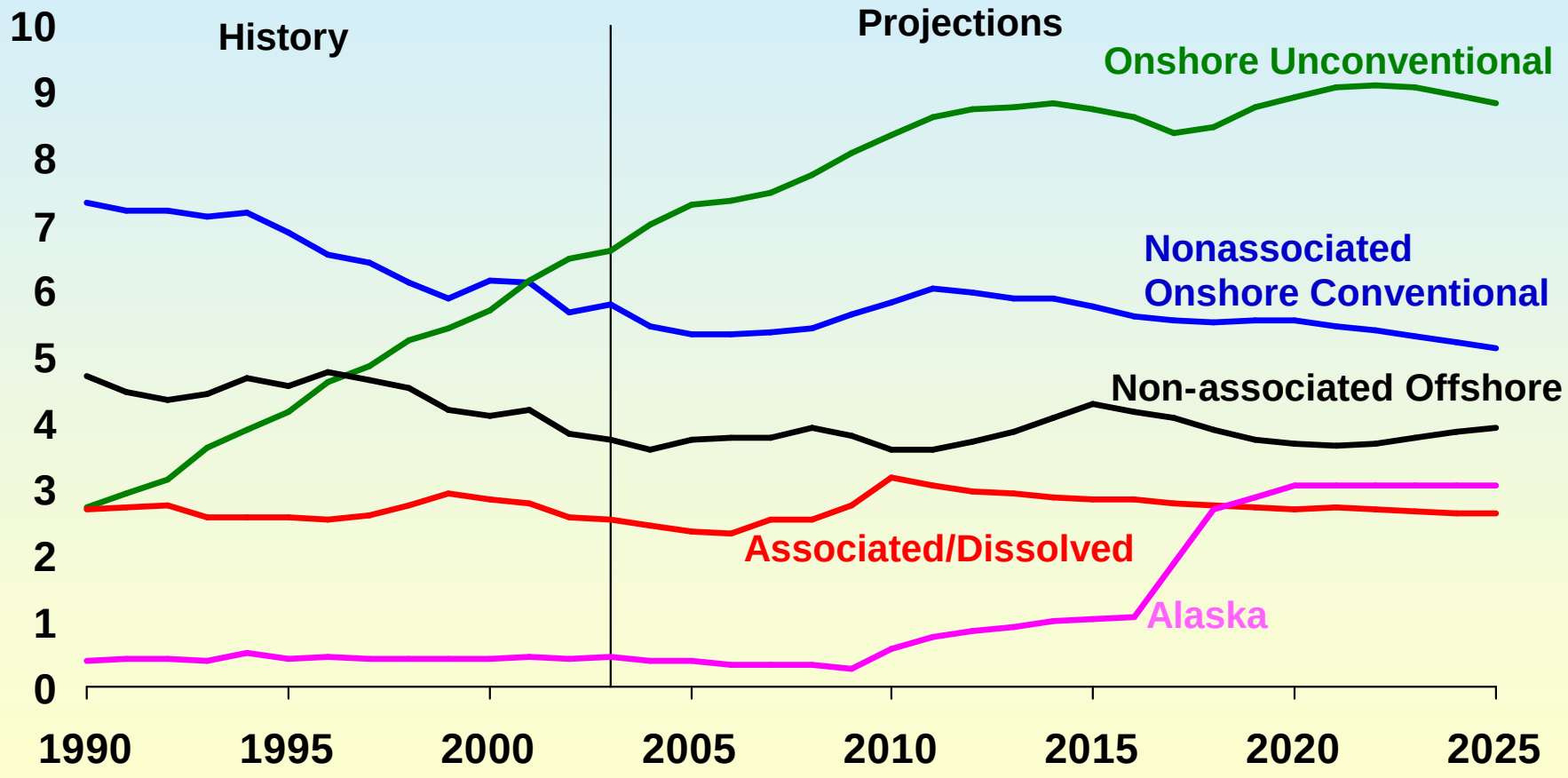
Restricted: 113 trillion cubic feet

Total: 1450 trillion cubic feet

*MMS mean estimates for the offshore OCS under Moratoria

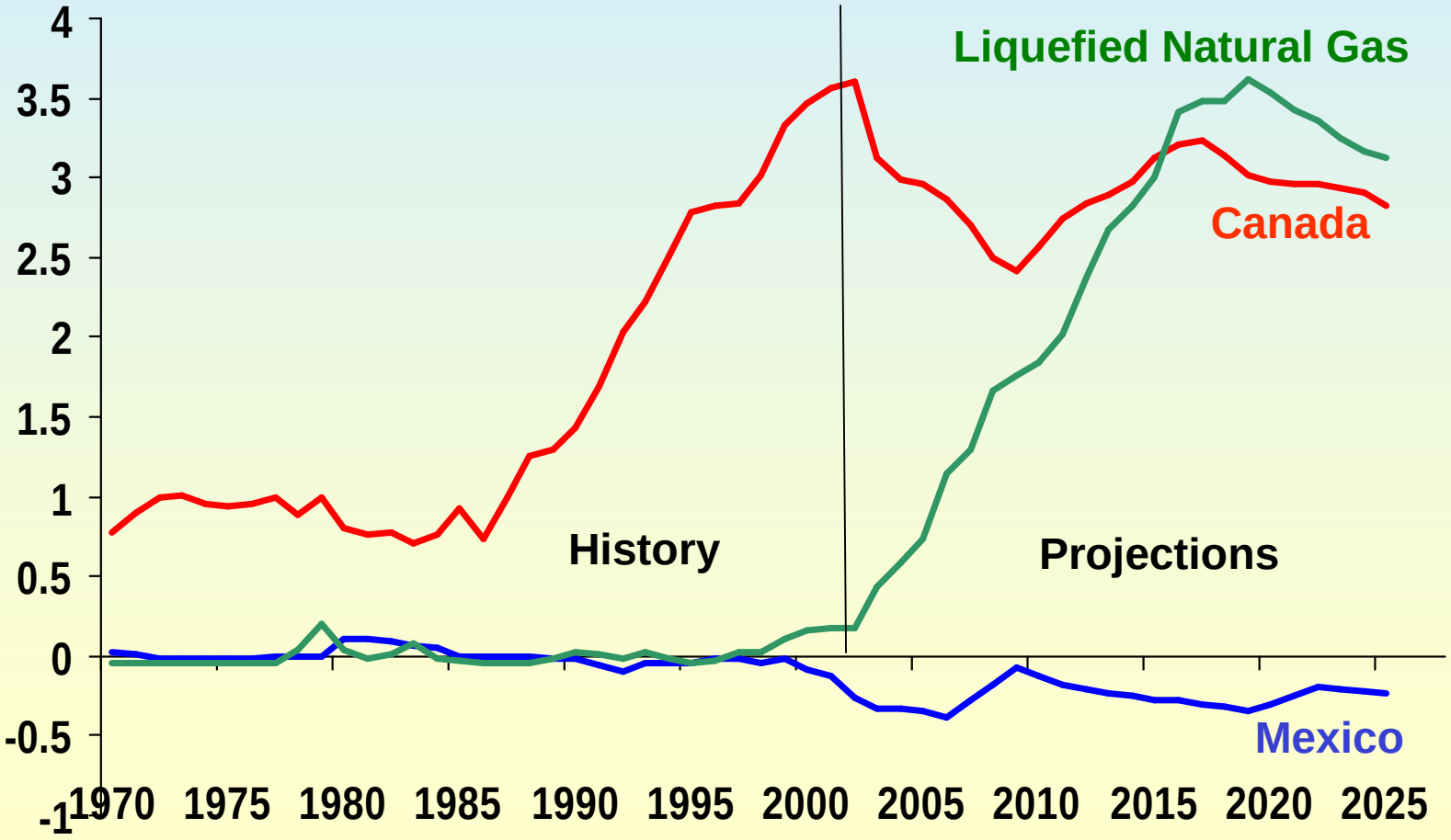
**Officially off limits due to Federal statutes or administrative decrees

U.S. Dry Natural Gas Production, 1990 - 2025 (trillion cubic feet)



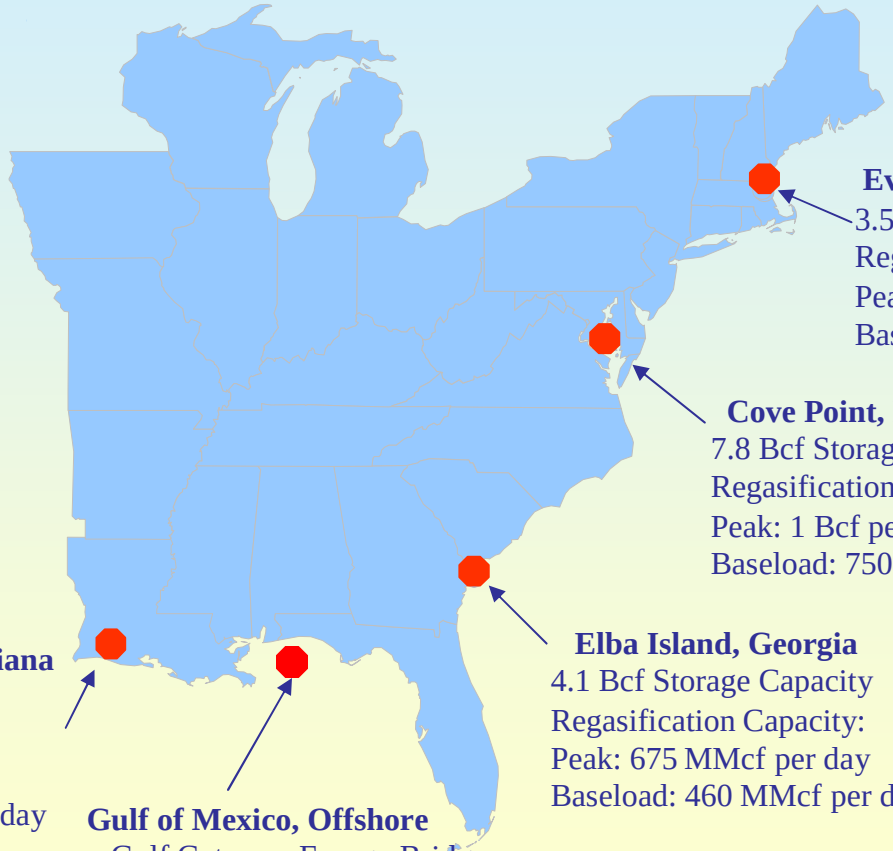
Source: *Annual Energy Outlook 2005-High B Oil Price Case*

Net U.S. Imports of Natural Gas, 1970-2025 (trillion cubic feet)



Source: *Annual Energy Outlook 2005-High B Oil Price Case*

Current U.S. LNG Import Terminals



Everett, Massachusetts
3.5 Bcf Storage Capacity
Regasification Capacity:
Peak: 885 MMcf per day
Baseload: 710 MMcf per day

Cove Point, Maryland
7.8 Bcf Storage Capacity
Regasification Capacity:
Peak: 1 Bcf per day
Baseload: 750 MMcf per day

Elba Island, Georgia
4.1 Bcf Storage Capacity
Regasification Capacity:
Peak: 675 MMcf per day
Baseload: 460 MMcf per day

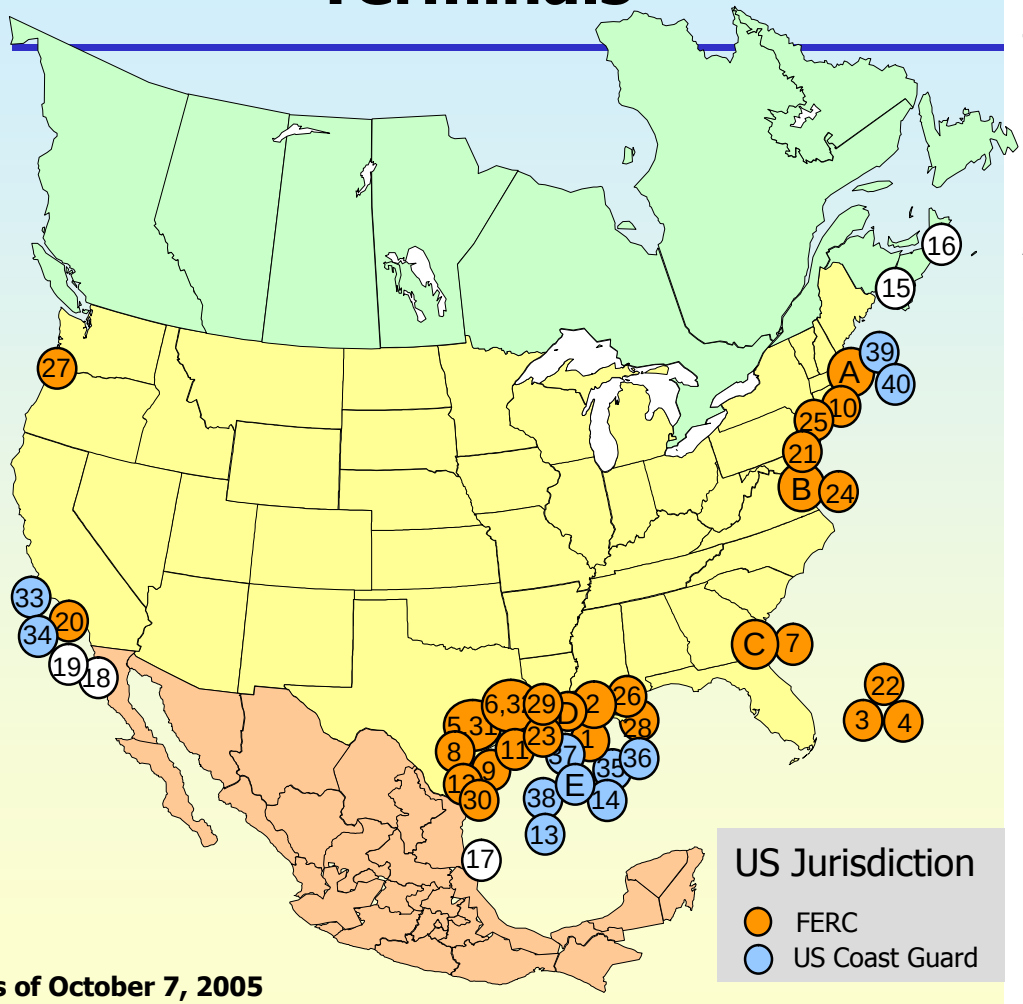
Lake Charles, Louisiana
6.3 Bcf Storage Capacity
Regasification Capacity:
Peak: 1.2 Bcf per day
Baseload: 630 MMcf per day

Gulf of Mexico, Offshore
Gulf Gateway Energy Bridge
Regasification Capacity:
Peak: 500 MMcf per day
Baseload: 500 MMcf per day

Source: Energy Information Administration

FERC

Existing and Proposed North American LNG Terminals



As of October 7, 2005

* *US pipeline approved; LNG terminal pending in Bahamas*

CONSTRUCTED

A. Everett, MA : 1.035 Bcfd (Tractebel - DOMAC)
B. Cove Point, MD : 1.0 Bcfd (Dominion - Cove Point LNG)
C. Elba Island, GA : 0.68 Bcfd (El Paso - Southern LNG)
D. Lake Charles, LA : 1.0 Bcfd (Southern Union - Trunkline LNG)
E. Gulf of Mexico: 0.5 Bcfd, (Gulf Gateway Energy Bridge - Excelerate Energy)

APPROVED BY FERC

1. Lake Charles, LA: 1.1 Bcfd (Southern Union - Trunkline LNG)
2. Hackberry, LA : 1.5 Bcfd, (Sempra Energy)
3. Bahamas : 0.84 Bcfd, (AES Ocean Express)*
4. Bahamas : 0.83 Bcfd, (Calypso Tractebel)*
5. Freeport, TX : 1.5 Bcfd, (Cheniere/Freeport LNG Dev.)
6. Sabine, LA : 2.6 Bcfd (Cheniere LNG)
7. Elba Island, GA: 0.54 Bcfd (El Paso - Southern LNG)
8. Corpus Christi, TX: 2.6 Bcfd, (Cheniere LNG)
9. Corpus Christi, TX : 1.0 Bcfd (Vista Del Sol - ExxonMobil)
10. Fall River, MA : 0.8 Bcfd, (Weaver's Cove Energy/Hess LNG)
11. Sabine, TX : 1.0 Bcfd (Golden Pass - ExxonMobil)
12. Corpus Christi, TX: 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)

APPROVED BY MARAD/COAST GUARD

13. Port Pelican: 1.6 Bcfd, (Chevron Texaco)
14. Louisiana Offshore : 1.0 Bcfd (Gulf Landing - Shell)

CANADIAN APPROVED TERMINALS

15. St. John, NB : 1.0 Bcfd, (Canaport - Irving Oil)
16. Point Tupper, NS 1.0 Bcf/d (Bear Head LNG - Anadarko)

MEXICAN APPROVED TERMINALS

17. Altamira, Tamulipas : 0.7 Bcfd, (Shell/Total/Mitsui)
18. Baja California, MX : 1.0 Bcfd, (Sempra)
19. Baja California - Offshore : 1.4 Bcfd, (Chevron Texaco)

PROPOSED TO FERC

20. Long Beach, CA : 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solutions)
21. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG - BP)
22. Bahamas : 0.5 Bcfd, (Seafarer - El Paso/FPL)
23. Port Arthur, TX: 1.5 Bcfd (Sempra)
24. Cove Point, MD : 0.8 Bcfd (Dominion)
25. LI Sound, NY: 1.0 Bcfd (Broadwater Energy - TransCanada/Shell)
26. Pascagoula, MS: 1.0 Bcfd (Gulf LNG Energy LLC)
27. Bradwood, OR: 1.0 Bcfd (Northern Star LNG - Northern Star Natural Gas LLC)
28. Pascagoula, MS: 1.3 Bcfd (Casotte Landing - ChevronTexaco)
29. Cameron, LA: 3.3 Bcfd (Creole Trail LNG - Cheniere LNG)
30. Port Lavaca, TX: 1.0 Bcfd (Calhoun LNG - Gulf Coast LNG Partners)
31. Freeport, TX: 2.5 Bcfd (Cheniere/Freeport LNG Dev. - Expansion)
32. Sabine, LA: 1.4 Bcfd (Cheniere LNG - Expansion)

PROPOSED TO MARAD/COAST GUARD

33. California Offshore: 1.5 Bcfd (Cabrillo Port - BHP Billiton)
34. So. California Offshore : 0.5 Bcfd, (Crystal Energy)
35. Louisiana Offshore : 1.0 Bcfd (Main Pass McMoRan Exp.)
36. Gulf of Mexico: 1.0 Bcfd (Compass Port - ConocoPhillips)
37. Gulf of Mexico: 2.8 Bcfd (Pearl Crossing - ExxonMobil)
38. Gulf of Mexico: 1.5 Bcfd (Beacon Port Clean Energy Terminal **-** ConocoPhillips)
39. Offshore Boston, MA: 0.4 Bcfd (Neptune LNG - Tractebel)
40. Offshore Boston, MA: 0.8 Bcfd (Northeast Gateway - Excelerate Energy)

Office of Energy Projects

FERC

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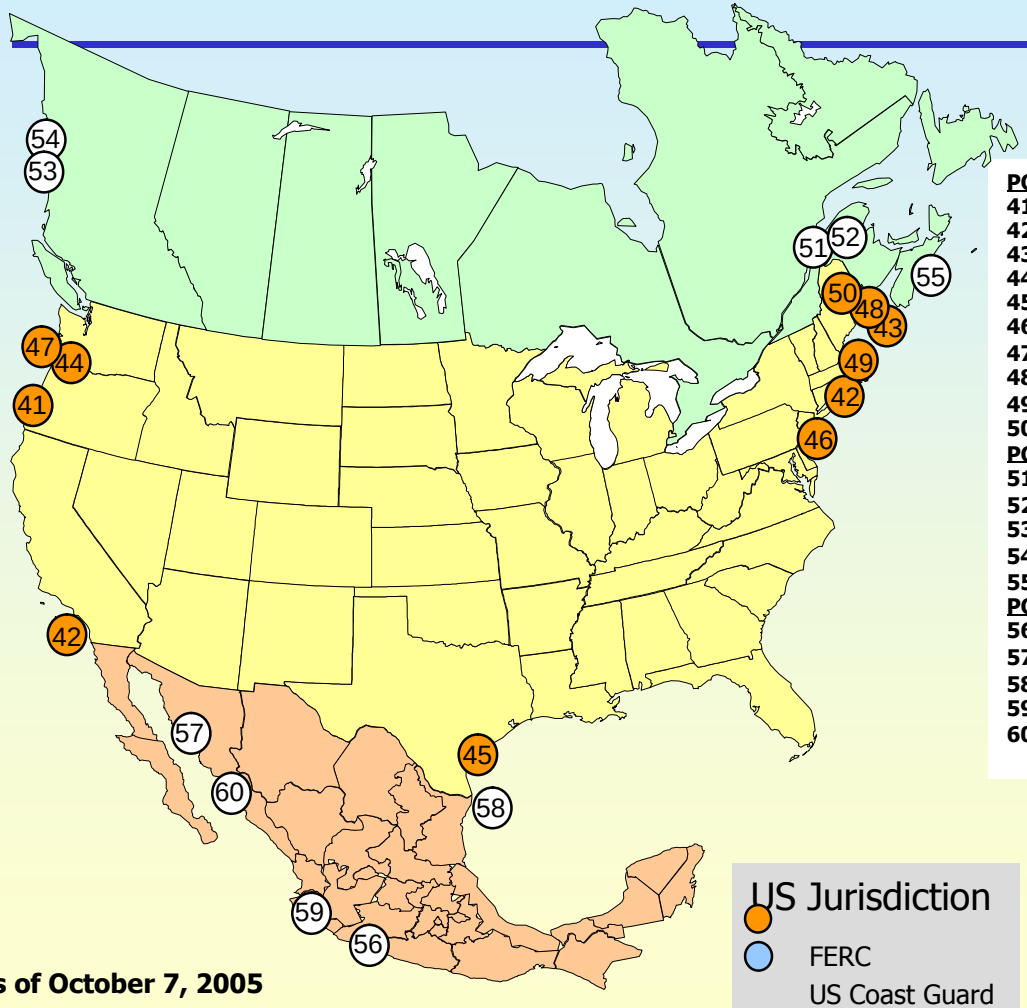
Potential North American LNG Terminals



POTENTIAL U.S. SITES IDENTIFIED BY PROJECT SPONSORS

41. Coos Bay, OR: 0.13 Bcfd, (Energy Projects Development)
42. California - Offshore: 0.75 Bcfd, (Chevron Texaco)
43. Pleasant Point, ME : 0.5 Bcfd (Quoddy Bay, LLC)
44. St. Helens, OR: 0.7 Bcfd (Port Westward LNG LLC)
45. Galveston, TX: 1.2 Bcfd (Pelican Island - BP)
46. Philadelphia, PA: 0.6 Bcfd (Freedom Energy Center - PGW)
47. Astoria, OR: 1.0 Bcfd (Skipanon LNG - Calpine)
48. Robbinston, ME: 0.5 Bcfd (Downeast LNG - Kestrel Energy/Dean Girdis)
49. Boston, MA: 0.8 Bcfd (AES Battery Rock LLC - AES Corp.)
50. Calais, ME: ? Bcfd (BP Consulting LLC)

POTENTIAL CANADIAN SITES IDENTIFIED BY PROJECT SPONSORS

51. Quebec City, QC : 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)
52. Rivière-du- Loup, QC: 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
53. Kitimat, BC: 0.61 Bcfd (Galveston LNG)
54. Prince Rupert, BC: 0.30 Bcfd (WestPac Terminals)
55. Goldboro, NS 1.0 Bcfd (Keltic Petrochemicals)

POTENTIAL MEXICAN SITES IDENTIFIED BY PROJECT SPONSORS

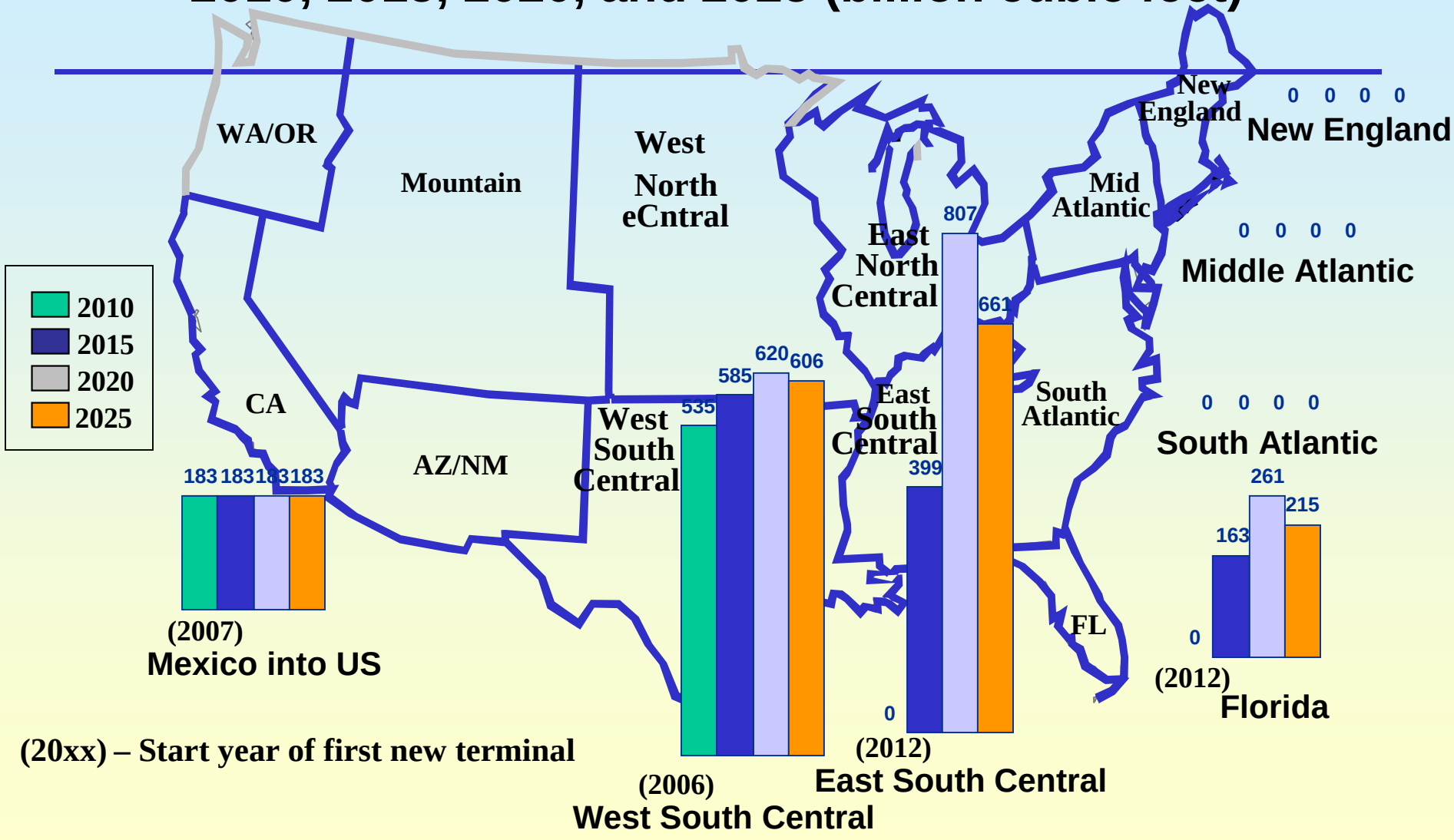
56. Lázaro Cárdenas, MX : 0.5 Bcfd (Tractebel/Repsol)
57. Puerto Libertad, MX: 1.3 Bcfd (Sonora Pacific LNG)
58. Offshore Gulf, MX: 1.0 Bcfd (Dorado - Tidelands)
59. Manzanillo, MX: 0.5 Bcfd
60. Topolobampo, MX: 0.5 Bcfd

US Jurisdiction
FERC
US Coast Guard

As of October 7, 2005

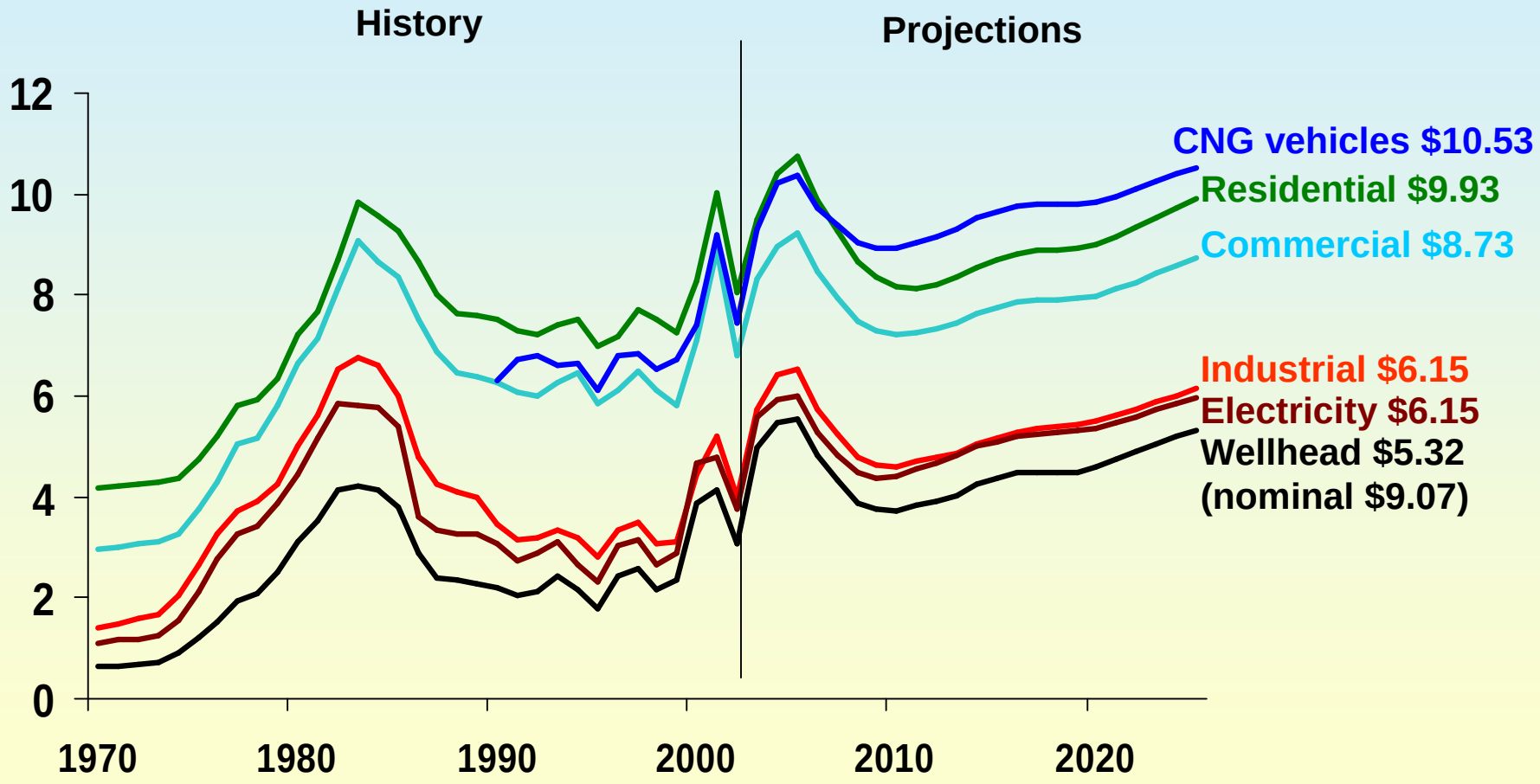
Office of Energy Projects

Regional LNG Imports at New Terminals, 2010, 2015, 2020, and 2025 (billion cubic feet)



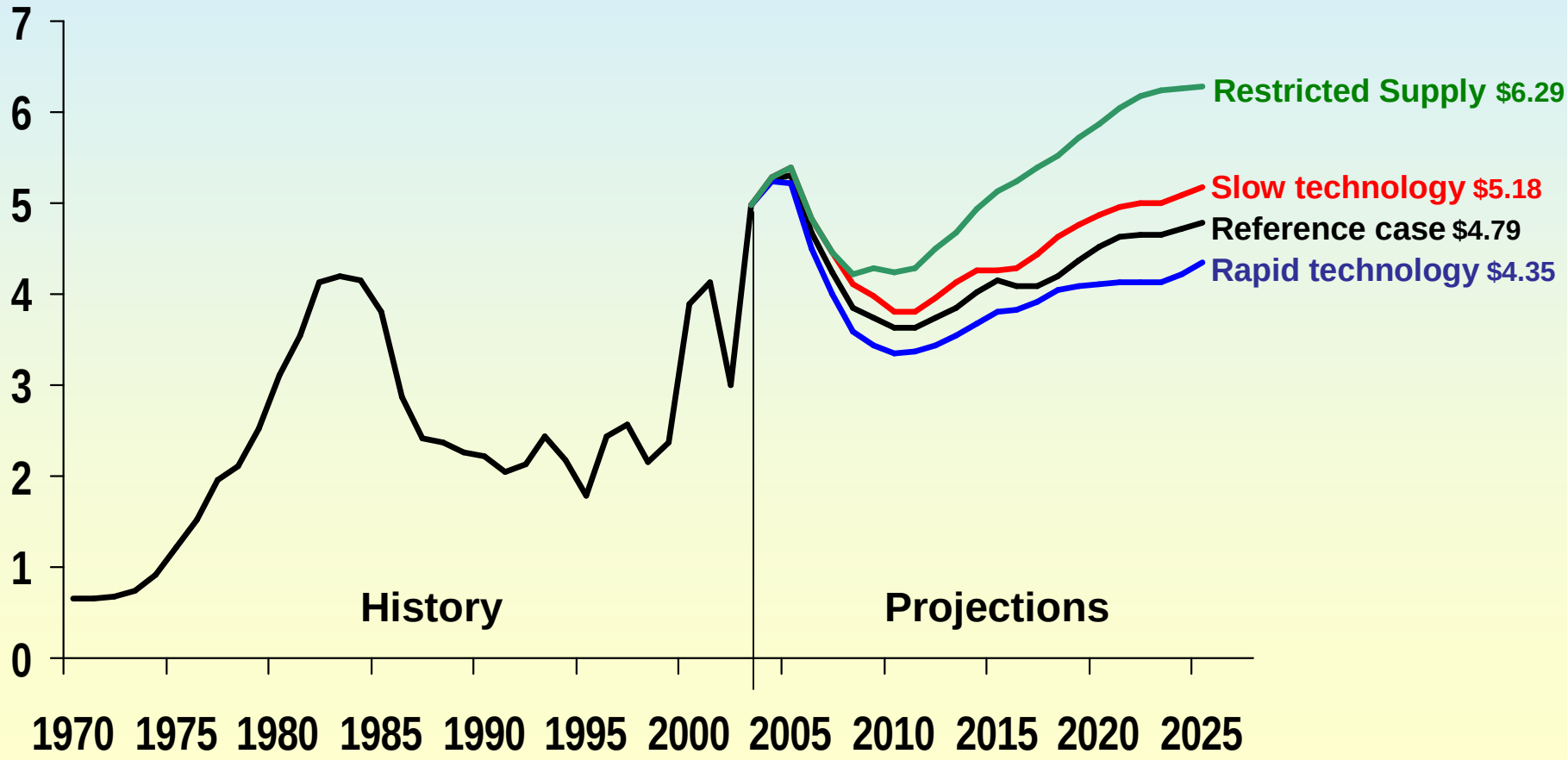
Source: *Annual Energy Outlook 2005-High B Oil Price Case*

Natural gas prices by end-use sector, 1970-2025 (2003 dollars per thousand cubic feet)



Source: *Annual Energy Outlook 2005 – High B case*

Lower 48 Natural Gas Wellhead Prices, 1970-2025 (2003 dollars per thousand cubic feet)



Source: *Annual Energy Outlook 2005*

International Energy Outlook 2005, July 2005

Annual Energy Outlook 2005, December, 2004

Short-term Energy Outlook, October, 2004

Special Reports:

The Global Liquefied Natural Gas Market: Status and Outlook, December 2003

"Qatar LNG: Status and Development," *International Energy Outlook 2004*

"Restricted Natural Gas Supply Case," *Annual Energy Outlook 2005*

The Impact of High Energy Prices on Energy-intensive Industries: A Case Study of the U.S. Chemicals Industry, August, 2004

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